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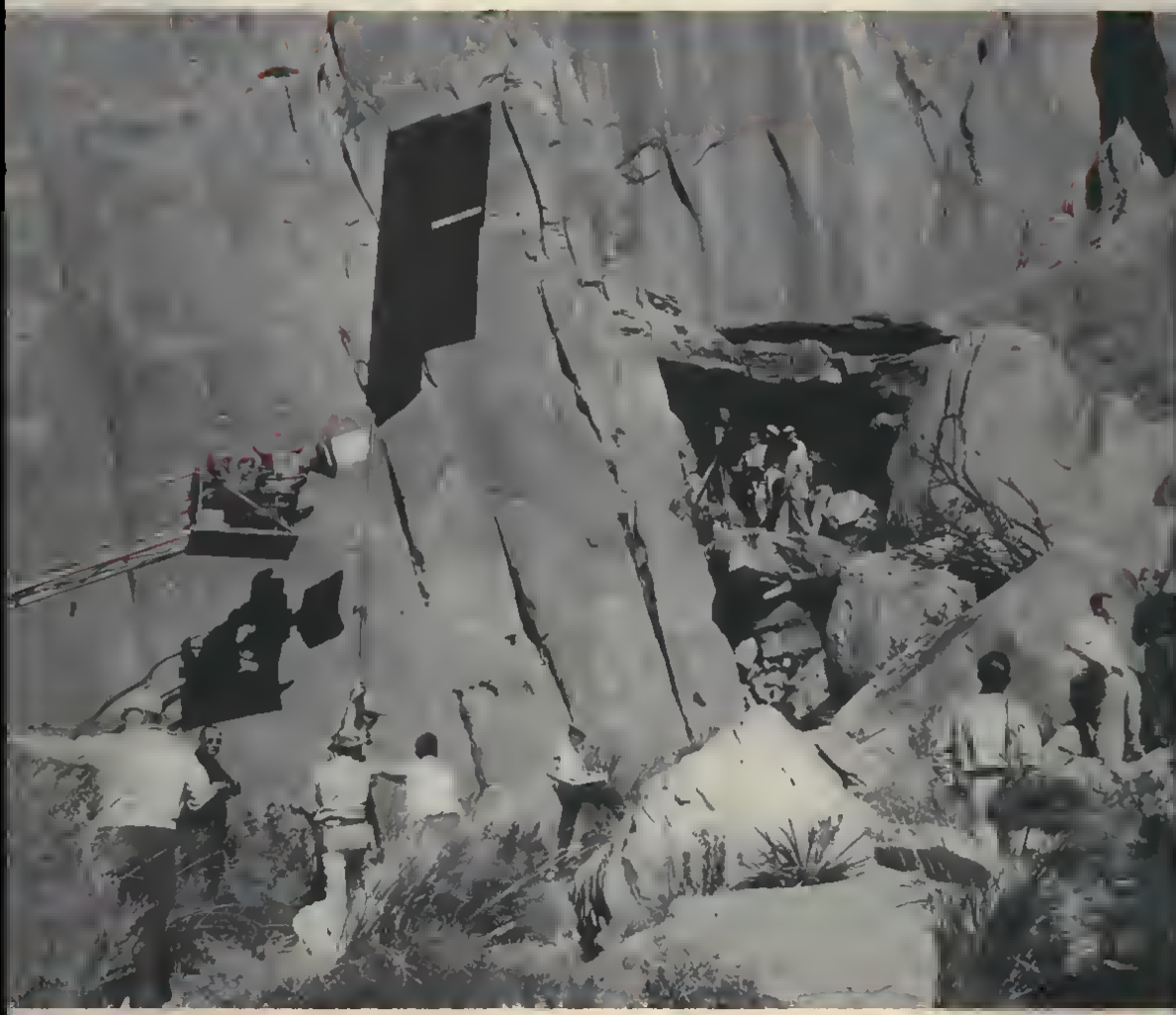

THIS MONTH:

- Surgical Cinematography
- The Significent Keyiight
- Photogrephing The Sports Film
- Whet Makes A Short Subject Click?
- Mejor Studios Test New Technicoior System

DECEMBER
1950

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ON THE COVER

DEEP IN A RUGGED, granite-walled canyon of New Mexico, director of photography Charles Lang, A.S.C., employs Hollywood's largest camera boom in photographing unusual action scenes for Paramount's "Quantrell's Raiders" — one of the very few times a camera boom has been used in such a remote location — *Photo by Mal Bullock*

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AMERICAN SOCIETY OF CINEMATOGRAPHERS

FOUNDED January 8, 1919, The American Society of Cinematographers is composed of the leading directors of photography in the Hollywood motion picture studios. Its membership also includes non-resident cinematographers and cinematographers in foreign lands. Membership is by invitation only.

The Society meets regularly once a month at its clubhouse at 1782 North Orange Drive, in the heart of Hollywood. On November 1, 1920, the Society established its monthly publication "American Cinematographer" which it continues to sponsor and which is now circulated in 62 countries throughout the world.

Dominant aims of the Society are to bring into close confederation and cooperation all leaders in the cinematographic art and science and to strive for pre-eminence in artistic perfection and scientific knowledge of the art.

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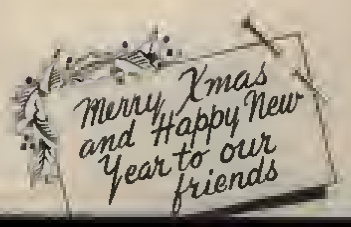

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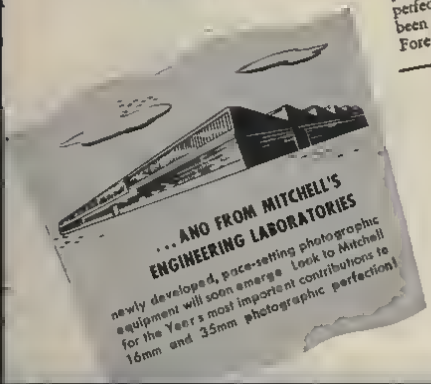

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Hollywood
Bulletin Board

Joe MacDonald, A.S.C. — cited for September "Picture Of The Month"

Winner of the A.S.C. Picture Of The Month award for September is Joe MacDonald, A.S.C., for his photography of 20th Century-Fox's "Panic In The Streets." Award is the ninth issued so far this year by the Society to directors of photography in the Hollywood motion picture industry and the first of such awards to be received by MacDonald.

MacDonald has been one of Fox's top directors of photography for a number of years with an impressive record of outstanding cinematography, including such pictures as "Pinky," "Down To The Sea In Ships," "Yellow Sky," "Call Northside 777," and "Sunday Dinner For A Soldier."

He is presently filming "U.S.S. Teakettle" for Fox, which stars Gary Cooper.

•

The 1950 Academy Awards presentations—the 23rd such event—will take place at the RKO Pantages theatre in Hollywood the evening of next March 22. Nominations and balloting will get underway shortly after first of the year.

•

James Wong Howe, A.S.C., currently directing the photography on "He Ran All The Way" for Roberts Productions, will contribute a chapter on the technique of lighting in cinematography for the industry publication, "Lights, Camera, Action . . . the How and Why of Motion Pictures," to be edited by Muriel de Lisa. The book, being issued under joint sponsorship of the Academy of Motion Picture Arts and Sciences and University of California at Los Angeles, will be published in the spring.

•

Although American-made films and American motion picture artists and technicians garnered most of the awards in the recently conducted 1950 National Poll of the *Film Daily*, its award for best cinematography went to Robert Krasker who photographed "The Third Man," a European production.

•

Clyde De Vinna, A.S.C., veteran Hollywood cinematographer, undertook a spectacular filming assignment recently to get unique camera angles from the air for Universal International's "Air Cadet."

To shoot the famed F-80 Shooting Stars in action more than 10,000 feet above ground, DeVinna arranged to have the tail assembly of a B-25 bomber redesigned to leave an opening in which the camera could be bracketed virtually hanging over the edge.

Above ground, flying just over a group of fighters, De Vinna lay flat on his stomach securely anchored to the plane with a rope around one foot. Leaning thus over edge of the plane, he spent over seven hours in the air and shot 2,000 feet of film.

•

Phil Tannura, A.S.C., last month followed the barnstorming "Harlem Globe Trotters"—sensational all-colored basketball team—around the country, training his camera on their contests for scenes for a forthcoming Columbia Pictures' production by the same name.

•

Captain Dan Norwood, U.S.N. retired, inventor of the Norwood Director exposure meter and author of several technical articles on the problems of color temperature and exposure in photography, has been made an Associate Member of the American Society of Cinematographers. His latest article, "The Significant Keylight," appears in this issue.

•

S.M.P.T.E.'s Spring-1951 convention will take place at the Hotel Statler, New York, from April 30 to May 4. Under consideration is the Society's plan to hold a single annual national convention instead of the two conducted annually as at present. Action on this proposal is one of the first to be tackled by newly elected president, Peter Mole, when he takes office in January.

•

Three U. S. Army Signal Corps photographers have been decorated for heroic conduct in picturing the Korean conflict. First Lt. Robert L. Strickland, Atlanta, Georgia, was awarded the Silver Star for "outstanding bravery and leadership while photographing the assault of X Corps troops for the objective of Seoul." His military and technical ability were significant factors in the production of over 14,000 feet of outstanding military motion pictures, according to the citation.

Sgt. 1st Cl. Martin W. Barnes, Oshkosh, Wisconsin, and Cpl. Ronald L. Hancock, Jacksonville, Florida, were awarded the Bronze Star Medal for "heroic achievement." At Inchon, Cpl. Hancock had his camera blown apart in his hands.

•

Cinecolor's Burbank laboratory, now working two shifts, will go to three shifts beginning January 1st. Stepped-up operations are planned to meet demand of mounting orders for both Cinecolor and the company's newer Supercinecolor process. Company's present backlog reportedly is triple the volume of business in the company's best year.

•

Sidney Solow, A.S.C., will chairman the Academy of Motion Picture Arts And Sciences' special committee on documentary awards for the forthcoming 23rd Academy Awards presentation in March.

•

Film editors of Hollywood motion picture studios are to have a social and fraternal organization. Idea was launched formally at a recent luncheon chairmanned by Jack Ogilvie and Warren Low. Tentative program includes setting up an annual awards program and banquet.

•

Norbert Brodine, A.S.C., has been signed by Twentieth Century-Fox to photograph "The Frogmen," which will start rolling soon with an all-male cast. For a considerable part of the two-month shooting schedule the film company will be at sea, operating under warlike conditions and abiding by Navy regulations.

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Keeping up with PHOTOGRAPHY

★ ★

DURING THE YEAR, natural daylight varies 50 percent in its color, due to variation in the altitude of the sun. Effect of the sun's altitude on daylight has been studied by R. H. Bingham and Dr. Herman Hoerlin, research scientists at Ansco Laboratories, Binghamton, N. Y., to determine the effects of the changing color of daylight on the individual layers of color film. Results showed a very close relationship between the color of light and the angle of the sun above the horizon, and that sunny daylight varies 50 percent in its blue content relative to red content, due to altitude variation. The color change was found to be equivalent to a temperature variation from 5300 K to 6500 K.

•

A NEW TECHNIQUE for photographing the heart, which makes it possible for the first time to see heart action slowed down 153 times, has been developed by the Institute of Medical Research of Los Angeles. The new technique is considered a major contribution to the study of rhythm and contraction of the heart and accomplished with a high speed motion camera. As many as 20 lamps are used to furnish illumination of 1,200,000 foot candles. The heart is photographed on 16mm. color film at a speed of 3,000 frames per second.

In a separate process, impulses of the heart action are recorded on a cathode ray oscilloscope and photographed. Resulting film is projected simultaneously with the heart film so that the viewer may see and study the living, pulsating heart and its impulses.

•

DUST PARTICLES, attracted to motion picture film when it becomes charged with static electricity, have long been the enemy of the motion picture cameraman, film laboratory technician and projectionist. Now new apparatus and techniques developed by Eastman Kodak Company measure accurately the electrostatic charge, enabling researchers to study properties of various materials used in film rollers and to what extent these tend to electrify film. Ultimate result will be to so design motion picture equipment that static will be eliminated entirely.

Laboratory studies show that dry velvet, for example, does not appreciably change the charge of Eastman Plus-X negative film when rubbed on either the emulsion or support side. Velvet moistened with carbon tetrachloride will hold the film at a constant charge when rubbed on the emulsion side, but when it is rubbed on the support side the film is almost completely discharged and thus less likely to attract dust particles.

•

A COLOR FILM exposed at 3,000 frames per second was recently demonstrated in England by the British Thomson-Houston Company. This high speed exposure—unusual for color film emulsions—was made possible by the development of a new form of mercury cadmium quartz lamp which can be overloaded to give for a few seconds a greater light intensity than anything achieved heretofore.

•

A DESK-TYPE FILM EDITING and maintenance machine has been developed in England that affords both sound and vision check of films, similar to the American Moviola. Tradenamed the "Electrowinda," the film reels lie flat on the table. The projected picture is 7 inches wide by 5 inches deep. Apparatus is geared to run the film through in either direction and is controlled by variable-speed, knee-operated controls. Speed range is from "dead slow" up to 750 feet per minute. Amplifier and speaker units are mounted on the back of the desk and flanked by useful desk space. A jack is provided for use of earphones.

•

A COMPLETELY MOBILE underwater motion picture camera, independent of air supply and electric cables, has been developed by the U. S. Navy. Camera is so designed that it can be completely operated from the outside, with external controls for the lens diaphragm, focus and start-stop switch. It has detachable wings and a vertical rudder which aid in transporting and stabilizing the camera underwater. The wings act as a planing surface so that the diver-photographer can sight on his target through the viewfinder, kick his flippered feet and guide himself by tilting and banking the camera similar to a plane in the air. Weight of camera is about 107 pounds out of the water and can be adjusted to have either positive, negative or neutral boyancy under water. It is believed there are important applications of the camera also in the fields of industrial and television films.

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AS CONTROLLABLE SUNLIGHT
—AN IDEAL PHOTOGRAPHIC
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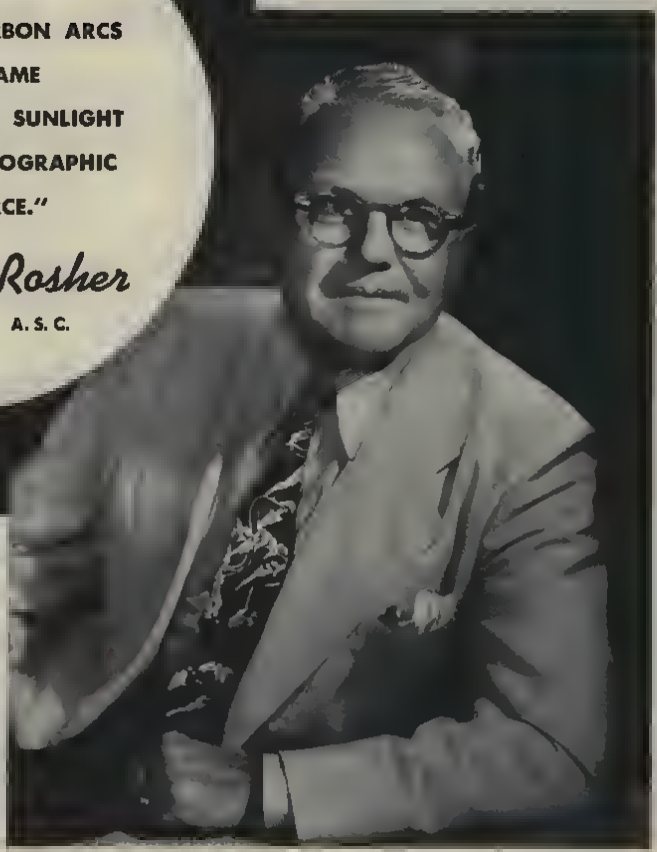
Charles Rosher

A. S. C.



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FIRST IMPORTANT photographic tests made of the new Technicolor system were filmed at MGM by Charles Rosher, A.S.C. (left), under direction of George Sidney (right), using keylight of 150 foot candles

New Technicolor System Tested By Directors Of Photography

New color filming system put to rigid tests in five major Hollywood studios. Gains in economy and photographic quality seen.

By LEIGH ALLEN

Following the general announcement by Technicolor Motion Picture Corporation of its new low light level photographic system a demonstration of some of the tests photographed by five Hollywood studios with the new system was given before members of the American Society of Cinematographers on November 6th. The test footage screened was photographed by director of photography Charles Rosher, A.S.C., at Metro-Goldwyn-Mayer studios, by Arthur Arling, A.S.C., director of photography at 20th Century-Fox studios; and by Charles Boyle, A.S.C., director of photography at Universal-International studios. The tests photographed at Warner Brothers and at Paramount studios were unavailable for screening at this meeting.

Initial photographic research on the system began at MGM, under the direction of John Arnold, A.S.C. One of the largest single users of Technicolor, this studio considered it to their interest to explore the possibilities of materially reducing photographing costs when filming in color a substantial item of which involves the lighting and set operation time required to place the great number of lighting units normally used. The "old" method of Technicolor photography demanded a working illumination of around 400 to 500 foot candles.

The objective was to find a means for shooting Technicolor, using if possible no more light than is generally used for black and white pictures. To accomplish this would mean that MGM, and other studios, would be able to produce more pictures in Technicolor without materially adding to production costs. The main objective at the beginning, according to Arnold, was to develop a system that would enable studios to photograph Technicolor interiors entirely with low-level, unfiltered incandescent light instead of arc light.

This led first to a revision by Technicolor in the emulsion characteristics of the film used in the camera, a step which led naturally to the next—an important technical change in the optical system of Technicolor cameras. The final major step involved changes and improvements in the Technicolor film processing procedure. Thus, the whole new process involves and depends upon a chain of improvements, each dependent upon the other.

For the director of photography, the new Technicolor system involves no important change in procedure other than the use of incandescent instead of arc light, as at present. Most of those present during screening of the test films expressed the view that the new Technicolor system rendered a more pleasing overall tone, less harsh than the current Technicolor system.

The tests photographed by Rosher consisted of three sequences of scenes staged and directed by George Sidney, and utilized three different sets. The first was a bedroom scene in which a girl enters, bids her escort goodbye at the door, then retires, turning out the room lights so that the only illumination is that filtering through the windows from out of doors. The keylight for this set was 100 foot candles. With regular Technicolor it would have been 400 foot candles. When the room lights were extinguished, the keylight dropped to 30 foot candles in the closeup of the girl. At all times the illumination is adequate, well distributed, and obviously carries to the depths required by the set.

The second set was a low key church interior. The girl is kneeling before the altar and facing the camera. Camera alternates between closeup and medium shot. Keylight for this sequence was 75 foot candles. A marked pictorial effect was that of the vari-colored light from the stained glass windows falling on floor of the church behind the girl.

The third set was a full day exterior of a garden with the girl singing— first in closeup, then in medium and long shots as she alternated between dancing then sitting on the garden wall. Keylight for these shots was 100 foot candles with cross lights of 125 foot candles.

According to Rosher, he began these tests on a purely experimental basis, he

(Continued on Page 424)

"OUR INITIAL tests," said Fox's director of photography Arthur Arling, A.S.C. (behind camera), "prove a need at this time for a good 1000-watt CP lamp for set illumination for the new system."

FIG. 1 — Every photographic subject is illuminated by a keylight. In this case it is the sun.

FIG. 2 — The "Keylite" meter is generally used at subject position and aimed directly at the keylight source — whether sunlight or artificial light.

The Significant Keylight

Further explorations in science of light measurement has resulted in development of new light meter well suited to needs of particular still and motion picture photographers.

By CAPTAIN DON NORWOOD

Inventor of the Norwood Director Exposure Meter

POSSIBLY ONE reason for the superior quality of Hollywood cinematography lies in the fact that a very systematic method is used in the analysis of each scene and the organization of the illumination elements.

The illumination on a scene is usually considered as consisting of certain fundamental elements, each of which has a definite function to perform. The first and most important of these elements is the *keylight*.

Every photographic subject is illuminated by a keylight. *The keylight may be reasonably defined as being the most intense light that is effective on a substantial portion of the camera-side of a subject.* Outdoors the keylight is usually the sun. Indoors it may be one lamp, or a group of closely assembled lamps, which projects comparatively intense light onto the subject.

The relative location of the keylight has a very marked effect on the appearance of the subject. This location determines where on the subject the highlights will be located, and where the shadows will lie. (See Figure 1, for illustration of effect of keylight on subject.)

By means of an appropriate location of the keylight the features of a subject may be brought out to best advantage, three dimensional appearance may be enhanced, depth effects may be established, and desirable artistic results may be achieved.

The intensity of keylight projected to subject's position usually determines the illumination level for the scene. Other

(Continued on Page 439)

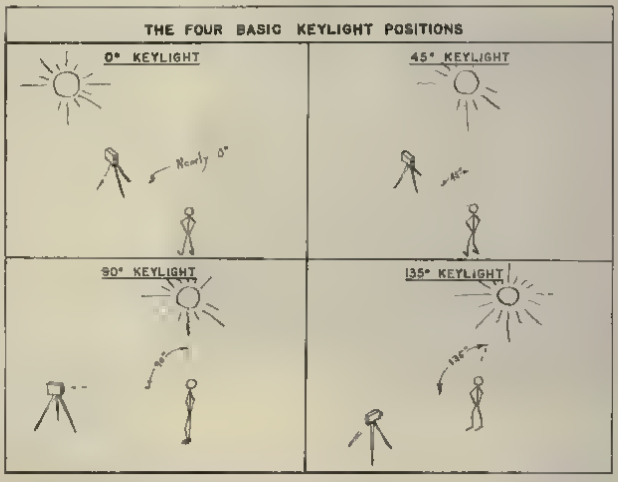


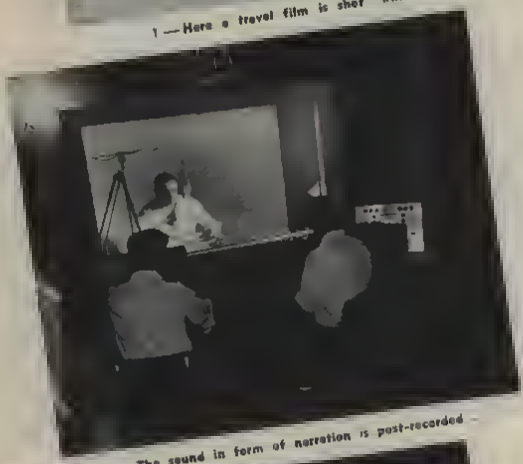
FIG. 3 — Any keylight can be classified as belonging in one of the four location groups shown above. Here sunlight is the most intense light falling on subject.

Sound And The Cinematographer

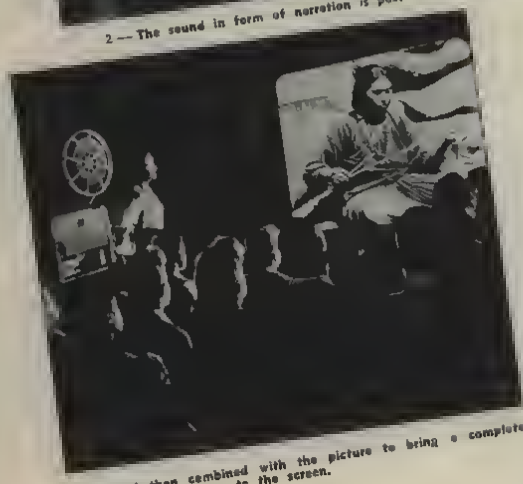
The cameraman who understands sound recording techniques can be especially helpful to the small film producer.

By CHARLES L. ANDERSON

1 — Here a travel film is shot "wild"



2 — The sound in form of narration is post-recorded



3 — And then combined with the picture to bring a complete sound production to the screen.

THERE ARE ALMOST as many different kinds of commercial film companies as there are organizations making commercial pictures. They range from large corporations with facilities equal to Hollywood studios down to one man film units. While the cinematographer's role is important to these producers, he carries an even larger share of responsibility when his company is a small one for then he is expected to know every facet of film production technique because the company usually cannot afford the staff of specialists to work with him he might find in the larger studios.

Therefore, the cameraman who understands sound techniques can be especially helpful to the small film producer. The mechanical and electronic aspects of sound are familiar to many, for they can be learned from the manufacturers' publications and from reports of new developments in the technical journals. But the artistic aspects of sound are vital to production, too. This article then, will serve as an introduction to them.

The sound used in motion pictures falls into four divisions: Narration, sync sound, music, and sound effects. Each plays a part in telling any story on film, and each has its special uses and liabilities the film-maker should be aware of.

The sound tracks of most commercial films usually features more narration than synchronized dialogue, music or sound effects. The narrator gives information not included in the scenes themselves and imparts non-visual facts. Narration is less costly than dialogue scenes because no sound need be recorded at the time of shooting. It can all be spoken by one man at one time after the film has been edited.

The aim of commercial and documentary films is to get their message to the public in the shortest possible running time. Narration is ideal for this purpose because so much can be covered in a straight "telling of facts." Synchronized dialogue, on the other hand, is more time-consuming, people take more time to make a point when talking with one another. But sync sound *does* have its uses, as we'll see later.

If the narration is carefully written *before* filming, time and film stock can be saved. Competent directors then know what scenes to shoot to fit right into the script without much loss in editing. And, what is probably more important, they don't finish a picture with scenes missing that are needed to illustrate the final narration. A narration that has been written by a man who understands the visual requirements of films can therefore serve as an excellent guide in filming.

Cameramen who are also their own directors can simplify production by matching shots to a narration script. But timing

(Continued on Page 430)

HOSPITAL — Billy Burke does much of his surgical filming at the Los Angeles County Hospital where he keeps a full complement of cameras and equipment. Special tripod affords working without hindering surgeon

STUDIO — Not all of Burke's filming is done in hospitals. Here is the Burke studio furnished as an operating room. Minor surgeries are performed and photographed here. All filming is done in 16mm Kodachrome

Surgical Cinematography

Billy Burke has specialized in this field for 25 years, has photographed over 1050 medical and surgical motion pictures.

By FRED C. ELLS

AIDING IN THE tremendous strides being made in surgery and medicine today is the 16mm. motion picture camera. Films in color of actual surgical operations are used not only to teach medical students but to inform and instruct surgeons in newly developed surgical techniques. The production of such films is a comparatively limited field. That is, it is not the type of production usually undertaken by the average commercial film producer. There are many reasons for this. First, photographing a surgical operation is an exacting science which few cameramen have taken the pains to develop. Also, there are many responsibilities attached to bringing into and using in a hospital operating room a motion picture camera and the necessary lighting equipment and apparatus.

One of the most outstanding surgical cinematographers in the field today, perhaps, is Billy Burke of Los Angeles who began his career quite by chance in 1925. He was a freelance newsreel cameraman then and attempted his first surgical film as a favor to a friend. Since then he has photographed more than 1,050 surgical and medical films in 16mm. Perhaps the most dramatic and exacting of all these is the film *Coarctation of the Aorta* which he recently completed for a Los Angeles surgeon. He is presently producing a 16mm. color film on the startling and comparatively recent medical discovery of the use of curare — this for a nationally known pharmaceutical house.

(Continued on Page 434)

DETAIL SHOTS — Surgeon for whom a picture is being made invariably sits in on special filming sessions when satisfactory closeups are photographed for orientation sequences. Segmented skulls are regular Burke props

INSERTS — Here, Burke—aided by a surgeon and a pathologist—is photographing an insert for a medical film. Pathologist points out details on slide in projector. Camera photographs projection (not shown)

New Camera And Tripod Carrier Developed At MGM

No longer necessary to remove camera from tripod when moving to new setup.

By FREDERICK FOSTER

A NEW CINEMATOGRAPHIC accessory developed by the Metro-Goldwyn-Mayer camera department now makes it possible to quickly move a tripod-mounted un-blimped Technicolor camera without removing camera from the tripod and re-mounting it later. Designed by John Arnold, A.S.C., executive director of photography at MGM, the gadget is called the "Tripod Easi-Lift."

As its name implies, its basic function is to ease the task of lifting camera and tripod between setups, when either a black and white or Technicolor camera is mounted on the conventional tripod. This it does by rigidly securing the tripod legs in their set "spread" or position, and affording means for three grips or camera assistants to lift the whole unit by hand.

Heretofore, moving a camera—especially a heavy Technicolor camera—from one setup position to another on location has been a time-consuming chore and waste of production time and money—this, of course, where the camera is used on the conventional tripod. Indoors, of course, and on some locations, the camera—when enclosed in a blimp—is usually erected on one of the mobile type camera mounts.

Another feature of the Tripod Easi-Lift is that it permits using a camera on more rugged terrain and in what heretofore was considered inaccessible locations. Where a choice setup calls for using the tripod on a slope, one leg can be extended for the lower elevation and secured in this position with complete safety, with no danger of the tripod toppling over (See Fig. 3.)

FIG 1—The Tripod Easi-Lift in action. Charles Rosher, A.S.C. (right) directs his camera crew in moving the unblimped Technicolor camera to a new setup on location for MGM's "Showboat."

Normally, a cameraman might hesitate to move the camera fifteen or twenty feet for a new setup on a rugged exterior location, to gain advantage of improved composition or camera angle, because of the time and trouble involved (in removing and remounting the camera). With the Tripod Easi-Lift employed, such a move is a simple procedure. Three grips lift

(Continued on Page 424)

FIG 2—Clamp sections slip over tripod legs and are locked in place. Sturdy welded handle permits easy lifting by camera assistant.

FIG. 3—Where tripod is to be used on hilly terrain, one leg may be extended for the lower elevation and locked securely in place.

FIG 4—The Easi-Lift may be left attached to tripod and folded for storage or easy carrying when not in use.

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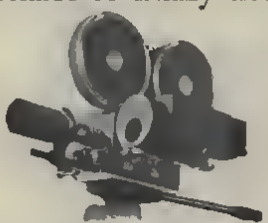

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Photographing The Sports Film

Timely tips for the amateur aiming to specialize in sports cinematography.

By CHARLES LORING

FOR REAL ACTION shots the professional uses the amateur's technique, getting right in close with a hand-held camera on specially staged scenes. Scene above is from Columbia's "The Hero"

SPORTS CINEMATOGRAPHY requires a special technique and is more difficult to do well than it might seem. A basic requirement of the cameraman, along with the ability to handle a camera well, is an alertness which invariably spells the difference between capturing an action on film or missing it. The cameraman who is a novice at filming sports often finds his initial experiences fairly frustrating. He is always reloading the camera when the spectacular action is taking place; on his way to a different vantage point just as the winning touchdown is scored, or perhaps pausing to wave to a friend when the winning home run is batted in. A bit of time and practice in filming sports will eliminate the possibility of most of these catastrophies happening to you and you will no longer have to talk about the "shot that got away." In fact, you will ultimately develop a kind of "sixth sense" that will enable you to anticipate important action and successfully capture it with your camera.

Sports films fall mainly into three categories: first, there is the record type film, which as the name implies is made as a complete record of an event. An example are the films which most universities record of their varsity football games. These record films provide important study for coach and players. The newsreel companies film all the plays of important grid games in order to provide ample action footage from which may be edited the high-lights of the game for the screen.

The second type of sports film is the entertainment, atmospheric, or just-for-the-fun-of-it film which is made either to capture some of the interesting action of a game or to provide an atmospheric background for another story situation. The third type is that in which action is staged especially for the camera. This applies not so much to competitive sports as it does to such activities as swimming, diving, skiing, etc. In this type of film, the cameraman has a distinct advantage because he is able to control the situation and see that it is played to the camera.

The record type of sports film is a pretty costly undertaking, not only because a great amount of film is required to record all the game, but because it is almost impossible to shoot all of the action with only one camera. To do a game full justice for record purposes, it is almost a necessity to have two or more cameras shooting simultaneously or alternately with different focal length lenses. Obviously, such a setup is feasible only when there is a sizable budget available, and this is a fact which should be realized by the semi-professional who contracts to do such work for a client.

The entertainment film is far less complicated, mechanically speaking, but it still requires a good deal of pre-planning. The cameraman should know in advance the highlights of the game he wants to shoot, and should pay close attention to the action so that he can maneuver himself into a favorable shooting position as the key action develops. The third type, or staged sports film, requires that proper advance arrangements be

(Continued on Page 433)

MOBILITY is essential in filming sports events. A lightweight tripod makes toting camera easy, serves as a unipod, too

HIGH AND LOW angles lend dramatic emphasis to shots of divers. Here, also, variable camera speeds can produce trick and slow motion shots

GOLF EXPERTS agree on value of movies as means of correcting player's golfing form. Such movies are simple to make, offer opportunities for amateurs

MOST IMPORTANT factor in a short is the basic idea or story, which must be simple, easily understood, not complicated as to plot. Once outlined on paper, shooting becomes comparatively simple

MOVIE AMATEURS will find greatest opportunities for production of short subjects in scenic and travel subjects. Merit of such material rests in its timeliness or novelty.

What Makes A Short Subject Click?

Well-written script, tight editing important as good photography.

By JOHN FORBES

SOME OF THE MOST successful short subjects seen on theatre screens were filmed with a 16mm. camera—some of them amateur. One example is the currently popular Walt Disney Technicolor short, "Beaver Valley," originally photographed in 16mm. Kodachrome. A few years ago, Warner Brothers received an Academy Award for a short subject embracing a trip down the Colorado River in a rowboat, which was filmed by a non-professional in 16mm. Kodachrome. And Metro-Goldwyn-Mayer's outstanding short subject, "Miracle In A Cornfield," depicting the birth and growth of the famous Mexican volcano Paricutin, was photographed for the most part in 16mm Kodachrome by an amateur movie maker.

Serious 16mm. ciné photographers are cashing in on rare and unusual footage not altogether because of the timeliness or interest of the subject matter, but because they have acquired the knack of filming such material along the formula lines long established by the professionals—no doubt a result of careful study of the professional format on theatre screens.

Close observation of short subject films should be illuminating to every amateur movie maker who aims to have his film creations approximate the professional rating of entertainment content.

The theatrical "short" is normally one-reel or two-reels in length. It is entertainment in capsule form; highly concentrated screen fare. Unlike feature productions, costs of making are definitely limited; there is a top figure beyond which the average cost must not go if it is to show a profit. Budgets are rigid in every phase of production.

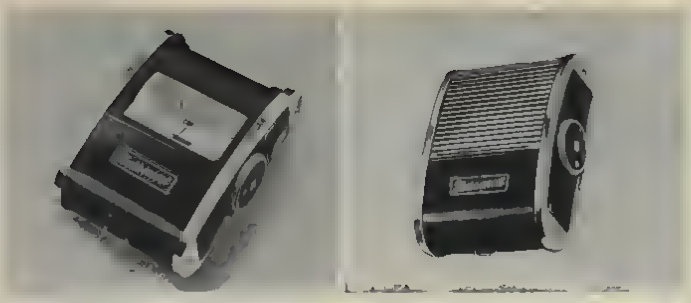
This economy is not unlike the amateur's desire to keep his filming within reasonable boundaries and to get as much on the screen as he can without spending a lot of money.

Some short subjects are very short indeed; others stretch out in screen time. A one-reel professional short subject will have a screening time of from six to eleven minutes. A two-reeler will run from seventeen to twenty-two minutes. This at sound speed of ninety feet per minute, or twenty-four frames per second. The ideal length for a one-reel subject is seven hundred and twenty feet—eight minutes screen time. This corresponds to two hundred and ninety feet in 16mm and one hundred and forty-five feet in 8mm. Fifty feet is given to the main and credit titles, and twelve to fifteen feet to the "end" title—all of which should be deducted from the total length figures to arrive at the net picture footage.

The one-reel subject of average length will consist of from forty to fifty different camera setups; in other words, that many scenes. It will have fifty to seventy-five cuts, as closeups are intercut with longer shots. These same figures can well apply to the average amateur short subjects production.

The most important factor in a short is the basic idea or story. In the professional field, requirements are rigid. The story must be simple, easily understood, not complicated as to plot, and progress

(Continued on Page 428)



THE NEW SIXTOMAT photoelectric exposure meter features a sliding chrome roller top, automatically calculates the correct f/ stop for every shutter speed

Sixtomat--New, Automatic Exposure Meter

PRESENTING several features entirely new in the photo-electric exposure meter field is the recently introduced German-made Sixtomat exposure meter. Sporting a completely new design, as meters go in the U.S., the Sixtomat is housed in a stream-lined functional plastic and chrome case with a sliding chrome roller top, which completely eliminates the usual cumbersome carrying case.

Absent are the customary large, flat calculating discs profusely covered with numbers, letters, etc Instead of the customary "shoestring" neck cord, the Sixtomat sports an attractive stainless steel chain with instant hook-on clip.

The roller blind shields from impact the cell and scale window All sensitive parts are shielded by spring suspension. The meter, in just one, quick operation, gives a direct reading for any film under any light conditions.

On the right hand side of the meter is a film speed dial which has a V-notch indicator on its outside milled rim. By means of a small stud on the dial, the speed value (ASA) of the film used is set opposite the V-notch. Thus the meter is set for automatic operation, and thereafter it is simply a matter of opening the meter, pointing it at subject or scene, turning the knob at the side until the indicator matches position of the needle and read the exposure value direct. It is particularly ideal for the cine cameraist for whom complicated adjustments with some meters has made exposure calculation a bugaboo of the hobby.

Essentially there are but four factors which determine the proper exposure of photographic film. Briefly stated, these consist of light intensity, film sensitivity, shutter speed and lens opening The Sixtomat measures light intensity reflected from the subject or scene and instantly gives a choice of lens openings and shutter speeds for the still cameraist, or the exact lens opening for the cine camera operator.

The reading is automatically retained by the meter by an ingenious memory-perfect device.

The f/ stop scale of the meter ranges from f/1.4 to f/45; the shutter speeds from 1/1000 to 30 seconds for stills. For cine camera use, the scale ranges from 8 to 16, 32 and 64 frames per second. The meter's sensitivity range is from 0.1 to 4000 foot candles. An important feature is the built-in magnifying lens in the scale window for easier reading.

Measuring about 2 by 3 by one inches, this palm-sized rugged meter is destined to find wide favor among cameramen in all photographic fields. The maker, P. Gossen, is said to have produced over a million photo electric exposure meters to date and is an outstanding manufacturer of electrical measuring instruments and precision equipment in Germany.

The Sixtomat is being imported and distributed in the United States by the Mitropa Corporation, New York City, and retails for about $32.50.

Europe's Cine' Classic

Luxembourg this year acted as host to the Union Internationale du Cinema Amateur, organizing the 9th International Congress and 12th International Competition. The 64-page program circulated to delegates listed an impressive list of entries, with U.S. entries the smallest in number.

At conclusion of the contest, France and Spain headed the list of prize winners. The order of merit for film entries from different countries was as follows:

1. France
2. Spain
3. Switzerland
4. Holland
5. Belgium
6. Britain
7. Italy
8. Germany
9. Denmark
10. Luxembourg
11. Portugal
12. Sweden

The last two were represented by only two films each; all the others by four.

NEW TECHNICOLOR SYSTEM

(Continued from Page 414)

had no formula to follow other than the tentative instructions laid down by Technicolor plus his long experience with regular Technicolor photography. He proceeded on the basis that color temperature was all-important with the new system. "Color temperature must be correct in the light falling on faces," he said, "regardless how it is elsewhere on the set. If color temperature in other parts of the scene is slightly up or down, it is relatively inconsequential."

Implementing the incandescent lamps were spun glass diffusers and frosted gelatins. Arnold, in preliminary photographic tests with the new Technicolor system, had already established the fact that China silk diffusers often prove detrimental because of their tendency to bleach and burn, thus changing the color temperature of the light.

The sequences of tests photographed at Fox by Arthur Arling were made on three different sets. Arling's aim was to put the new system to test following customary production routine. Thus he chose scenes and setups approximating those normally used in regular Technicolor production.

The first set was a night interior of a living room in which a girl and young man meet. The camera ranges from closeup to medium shots The keylight registered 125 foot candles The action was repeated and photographed several times, each time with the illumination setup altered slightly but without changing the keylight level.

The second sequence of shots elicited considerable comment for their lighting artistry The set was a full night interior of a bedroom with soft moonlight falling on a window at the rear. A girl on a couch, turns out the room light, arises and goes to the window where she opens the shutters, admitting moonlight. For this scene a keylight of 150 foot candles was used. This dropped to 100 foot candles when the room light was extinguished. An arc with four scrims was used back of the window for the moonlight effect in the closeup of the girl at the window; for the medium shot of the moonlight effect, a Senior was used with a Macbeth filter.

The third sequence was a full lit day interior of a living room with shots ranging from medium to closeup. Here again, the keylight was 150 foot candles.

"These initial tests," said Arling, "prove the great need at this time for a good 1000-watt CP incandescent globe. For the new Technicolor system, the present 2000-watt globes are too powerful, requiring diffusion to cut down illumination intensity. With the thousand-watt lamp we could dispense with diffusers and get correct color temperature and light intensity at the same time."

"When we filter incandescent lamps for regular Technicolor," he added, "we lose sixty percent of the light. With the new system, using incandescent light, we gain back this lost sixty percent and have the advantage of the full hundred percent of the lamp's potential illumination. Where arcs are used with the new Technicolor system, which requires use of filters, resultant light loss from filtering is around 30 percent — an amount easily expendable."

The test sequences photographed by Charles Boyle at Universal-International consisted of wardrobe and makeup tests for the Technicolor production, "Don Renegade." The takes ranged from closeups to medium shots, with an occasional two shot, and were filmed with a keylight of 150 foot candles. All illumination on the sets was by 2000- and 500-watt globes of 3450 K temperature. Spun glass and frosted gelatin diffusers were used. An incandescent broad was used with a silk diffuser.

Commenting upon the new Technicolor system, Boyle said: "It is the most important development in Technicolor's history. After shooting Technicolor for 13 years, I just couldn't believe that such results were possible until I tried it. Working with Technicolor with a keylight of only 150 foot candles, I just kept my fingers crossed until I saw the results It means big things for color film production in general."

Lest it be interpreted from the above that arc lighting is doomed to oblivion, insofar as color photography is concerned, it should be stated here that in the opinion of most directors of photography the general scheme for set lighting will probably be as follows for the new Technicolor system:

a—Small sets: practically all unfiltered incandescents.

b—Medium sets: unfiltered incandescents with some filtered arcs.

c—Large sets: unfiltered incandescents with a larger percentage of filtered arcs than used on medium sets.

d—The use of arcs will vary with the cameraman as at present with black and white photography.

In recent weeks, considerable research has been done on developing a suitable gelatin filter for filtering arc light to incandescent color temperature. The initial filter developed for this purpose has been identified in the industry as the MT-1. Tests indicate that this filter is equivalent to two No. 54's and one No. 62. It presently requires one Y-1 gelatin sheet added when used with the Duarc and two Y-1 sheets when used with the high intensity arcs Fading tests performed with this filter by Technicolor are reported as satisfactory

Development is continuing on a MT-2 filter which will be the equivalent to two No. 54's plus the density of two-thirds of a No. 62. Both the MT-1 and MT-2 filters reportedly have an absorption factor of 40%.

As to the general availability of the new Technicolor system, the corporation is said to be aiming for full conversion to the new process within four to six months. It can handle some small Hollywood production sequences immediately. Developments are underway so that some shooting under the new process may be done in England by the first of the year.

M.G.M. CAMERA AND TRIPOD CARRIER

(Continued from Page 418)

the tripod with camera and set it down in the new location in a matter of a minute or so

Construction of the Tripod Easi-Lift is rugged but light, due to use of dural tubes and bars, also use of the same material in all clamps and fittings. The telescopic feature of the device allows the camera to be raised to any height afforded by the tripod. The clamps fit over each tripod leg and are securely locked in place by thumb screws. As shown in Fig. 2, handles welded to the clamp sections provide the means for lifting the tripod with camera by grips or camera assistants.

As shown in Fig. 4, the Easi-Lift may be left attached to the tripod and folded with it for storage or easy carrying, eliminating the objection to "just another gadget to carry around."

First to use the Tripod Easi-Lift was George Folsey, A.S.C., on location shooting for "Mr. Imperium." William Mellor, A.S.C., also used it on exteriors for "Across The Wide Missouri," and Charles Rosher, A.S.C., is using it on "Showboat." The consensus of MGM cameramen is that the gadget rates an Academy Technical Award. The studio, meanwhile is having all tripods equipped with the Easi-Lift as standard equipment. END

NOTICE
TO CONTESTANTS

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AMERICAN CINEMATOGRAPHER'S 1951 INTERNATIONAL AMATEUR MOTION PICTURE COMPETITION

You must file an entry blank with the contest chairman prior to submitting your film. Use coupon below to secure your entry blank.

TEN American Cinematographer Trophy Awards are the prizes that await the makers of the TEN TOP films entered in our 1951 competition, which closes March 1st. Judging and classification of films begins December 1st, 1950. Six leading Hollywood directors of photography will make up the judges panel.

RULES

- Each entry must be wholly amateur produced, except for any titles and film laboratory work. Any sound accompaniment must be recorded exclusively by the entrant and/or his amateur associates.
- Film length limited as follows: 8mm., 400 feet; 16mm., 800 feet.
- Each film reel and its container must be plainly and securely labeled with owner's name and address.
- Films originating outside the continental United States should be securely wrapped or boxed, preferably in carriers which may be used for their return. Also, necessary arrangements should be made that will insure films passing all necessary customs and export-import regulations on their return.
- All films must be shipped on reels and in cans to contest headquarters in Hollywood, *fully prepaid*. Entry blank should be mailed to contest chairman in advance of sending films. *There is no entry fee* for contest films.
- Upon close of competition, all films received will be returned via Express collect and insured (in the United States). Contestants residing outside the United States should make the necessary arrangements in advance for the return of their films in keeping with their country's postal and import regulations.
- Fees for return postage and insurance for *foreign films* should be sent contest chairman with entry blank. In most instances an International Postal Money Order will be the simplest way to handle this.

MAIL COUPON TODAY FOR YOUR ENTRY BLANK

Contest Chairman,
AMERICAN CINEMATOGRAPHER,
1782 No. Orange Drive,
Hollywood 28, Calif.

Sir: Kindly send me official entry blank for AMERICAN CINEMATOGRAPHER'S 1951 Amateur Motion Picture Competition. I plan to enter an 8mm ___/16mm ___ film, length_____ft.

Name_____

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City_____ Zone_____ State_____

Country_____

Television Filming Activities

By LEIGH ALLEN

There is no longer any doubt as to the future of motion pictures in television. The public—not the television industry—has decided strongly in favor of filmed programs.

First to influence this decision was the poor quality of kinescoped shows; second was the more entertaining qualities of programs consisting of televised motion pictures. The fact that in many instances the films were "oldies" seemed to have made no difference. The public wanted entertainment, but above all quality—in its TV programs.

•

So we find more and more video programs switching to films as the medium by which shows are fed to video viewers. This important trend has been a boon to professional cinematographers. Today, more than a score of Hollywood's top directors of photography are photographing films for television.

Norbert Brodine, A.S.C., long one of MGM's top cinematographers, photographed the first of the 1950-51 series of Groucho Marx shows for television. When 20th Century-Fox summoned him to direct the photography on *The Frogmen*, William Sickner, A.S.C, a veteran on TV films, succeeded him. Sickner is also filming the Stokely Show for television.

Fred Jackman, Jr., A.S.C., is directing and photographing the Ralph Edwards TV show in Hollywood. This is filmed in 35mm with Mitchell cameras. Edwards has set up a complete production unit, indicating that all his shows for television will be made on film.

Fred's brother, Joe Jackman, is assistant cameraman with the Horace Heidt show which is produced on 16mm film for television. The Heidt company employs three Mitchell 16mm professional cameras and has spent over $50,000.00 for cameras, lights and other equipment necessary for production of top quality video films.

At present, Heidt is building a studio on his ranch property in Van Nuys and here will be produced much of his future video program material.

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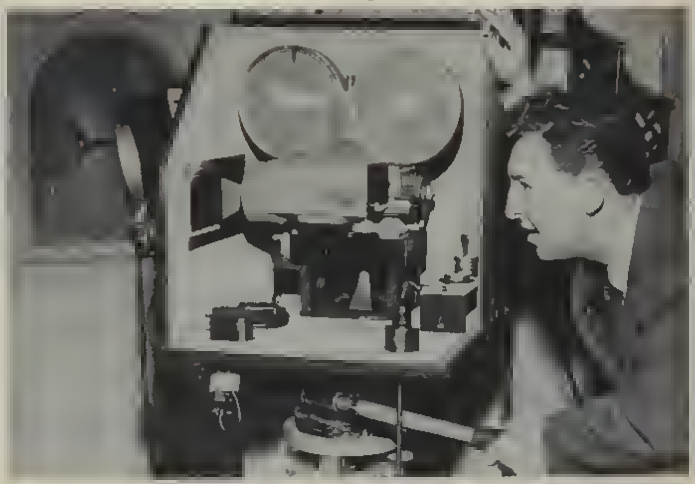
Edgar Bergen's initial television show was produced personally by Bergen and photographed by Jerry Fairbanks Productions, with Tom Morris directing the photography. Three 35mm cameras were used and the show was shot in sequences on two separate evenings before a live audience at CBS studios in Hollywood. Over 30,000 feet of film was shot, reportedly twice as much as was necessary—and ten times more than went into the finally edited show.



EDDIE BRACKEN, who has his own television show, also heads a television film producing organization—Bracken Productions, Inc. Seen here lining up his Maurer 16mm camera for a scene, Bracken is currently producing "This Is Our House" for video

The real veterans among television film cameramen—on the coast, at least—are Benjamin Kline, A.S.C, and Walter Strenge, A.S.C, both of whom have been working consistently at the Hal Roach studios, Hollywood's biggest TV film production center. Kline is shooting the Bing Crosby television film productions and Strenge is shooting video film for Roland Reed Productions.

•

Some other A.S.C. directors of photography finding increased activity in the field of television films are Ray Fernstrom, currently shooting for John Sutherland Productions, Inc., and William Sickner, who is directing the photography on the Pantomime Quiz video show. Mack Stengler, A.S.C., also may be considered a "veteran" in this field, having more than a year and a half of TV film photography behind him thus far. Stengler shot the Lone Ranger series for television.

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Lucien Andriot, A.S.C., is currently directing the photography on the Walt Disney hour-long video show to be televised Christmas day. Previously, Andriot photographed the Life Of Riley television shows.

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Other A.S.C. men who have become permanently affiliated with the booming television industry are Gus Peterson and William O'Connell. Peterson is engineering the lighting of the Alan Young show at CBS's KTTV studio. O'Connell is director of lighting at the KECA-TV Hollywood studio.

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Early in November, what is reportedly the first serial on film to be made expressly for television went into production in Hollywood. The serial consists of thirteen chapters, each 27 minutes in length.

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Said to mark a milepost in this tremendous new industry is the first hour-long show produced on film for television and previewed in Hollywood last month—Alexander Dumas' *The Three Musketeers,* produced by the Hal Roach Studio for the Magnavox Corporation. Directing the photography was Benjamin Kline, A.S.C.

•

In addition, there are hundreds of films currently being produced for television programs, not only in Hollywood but in Chicago and New York: Gene Lester's *Hollywood Calling,* Erskine Johnson's *Hollywood Newsreel;* the series of films starring Arthur Treacher, produced by Reynolds Productions; the *Forest Ranger* series by Rangers, Inc., Hollywood, and countless others.

•

All in all, television film production holds big promise for motion picture cameramen—16mm as well as 35mm.

SHORT SUBJECTS CLICK

(Continued from Page 422)

in a straight line. There is no time, as in features, to develop character. A player's character must be established on his initial screen appearance and he must remain in that character throughout the picture.

The picture must jump away to a fast start, as a sprinter coming off his starting mark. Likewise, it must come to a rapid close once the story is told A good rule to follow is to launch the story with a flying start, tell it in proper speed, increasing to the climax, and then get it off the screen just as fast as you can without obvious abruptness.

Long experience has taught the professional the sure way of making shorts. The amateur can make his in the very same proved procedure. First evolve the basic idea or theme of the story. Then put it on paper in synopsis form If it still seems good, make a more detailed synopsis, filling in all the salient particulars. The final step is to polish the synopsis and divest it of any trends to stray away from the central story line.

Now write the script or scenario, breaking the story into the forty or fifty scenes needed to pictorialize it. This is where you get your basic continuity. The story as a whole is cut into scenes, it is not a matter of trying to fashion a story out of scenes.

The next step is to consider the scenario for length. First drafts invariably run too long and must be condensed This may be determined by actual trial. The professional often will have two or three people "walk through" the scenes, simulating the specified action in correct timing. A stop watch clicks the exact timing. Like the amateur, the professional has a given amount of negative and must make every foot of it count.

The professional tries to work in short scenes Speaking in terms of 35mm. film measurements, which you can readily reduce to equivalents in 16mm or 8mm., a ten-foot scene is relatively short, although to gain the effect of speed in comedies, the professional will use six-foot or even three-foot cuts. A fifty-foot scene is just about the limit for any one setup angle.

Now as to the nature of subject matter: Cartoon films are currently the most popular shorts on the screen today, but these are beyond the production abilities of the average amateur. Next in popular esteem come the comedies, particularly what are termed "situation" comedies. Here the premise or locale is quickly established and the central character or characters put in situations which of

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themselves are amusing. It is rather a comedy of action than of acting. Such type of film is well within the ability of the advanced amateur movie maker.

The laugh-getting effects the professional tries to get with dialogue can, to a degree, be achieved by gag titles. Certainly, the titles in amateur films of this sort should be humorous in keeping with the story.

Next in order of screen appeal are scenic and travel pictures. It is in these two classifications that the amateur will find his greatest opportunities. Merit in such material rests on the unusualness or unfamiliarity of the audience to the pictured scenes, or in the rare and breath-taking beauty of the vistas.

With subjects of this sort, much depends upon the narrator—if the picture is in sound—or the title writer, where the picture is made silent. Today, with more and more amateurs using magnetic tape or wire to furnish synchronized sound with their films, the cinefilmer now has opportunity to develop skills in writing and recording sound, dialogue and music for motion pictures. Here bright and sprightly commentary contributes much in needed explanation, description and entertainment, but the same touch can also be given silent films with carefully written titles. An otherwise dull or average travel reel can be elevated to high screen rating by shrewd cutting and clever titling—or narration.

Another subject field is the novelty reel. This includes uncommon events—such as the Paricutin volcano subject mentioned earlier. A ping pong game, swimming or diving event, curious industries, odd occupations, unusual factory processes—all these can be screened by the amateur cinematographer with a flair for originality or delineating the unusual, to enhance his prestige as a movie maker.

And now just a few words about camera technique. First the need for constantly changing camera angles should be emphasized. The ciné photographer should guard against the static shot—the "postcard" shot. There are instances where short subjects departments of Hollywood studios have considered stories which, because of peculiarities of construction, would necessitate shooting the entire reel in two or three setups. Due to the sheer inherent story value, they gambled, and filmed them. They were deadly on the screen. Slow, draggy, uninteresting. When similar stories were adapted to standard short subjects treatment, with its many short and fast cuts, in spite of speed they gave the impression of being twice as long. Audiences lost themselves in the story, drank heartily of the proffered entertainment, saw a fast parade of varying scenes—hence the impression of greater length.

This is something for the ciné amateur to consider when inclined to leave in his edited pictures every frame of a given shot—unwilling to use the shears in true professional editing procedure trimming scenes down to their bare essentials. In the final analysis, it is this skilled cutting that actually makes a short subject click on the screen.

SOUND AND THE CINEMATOGRAPHER

(Continued from Page 416)

is quite important here. For example, the photographer on an industrial film may make a scene of a workman loading crates onto a boxcar. If the action is not particularly engrossing, he may stop his camera after four seconds. But if he knows there's eight seconds of narration about shipping the product, he'll very likely film at least eight seconds of this loading process. Then, even if the cameraman can't find time to get more transportation footage, the editor will be able to "fill out" the picture to fit the talk on shipping the sponsor's products.

In writing the narration, remember that it's unwise to keep your narrator talking every moment the picture is on the screen. Pauses are desirable and give the audience a chance to watch the film in silence for a few seconds. A constant flow of chatter begins to sound like an irritable buzz after a while and our ears simply cancel it out. Several of the shots in a picture are sure to be self-explanatory, while others—especially in a travel film—might have been cut in for their beauty alone. This footage should be left silent or accompanied with music. A narrator who speaks only when he has something to say will be respected by his audience.

Although it sounds simply and obvious, there's one rule about writing narration that even the experts sometimes forget, and that is: Don't tell the audience what they can see for themselves on the screen, unless special emphasis is desired. If you have a scene of people sunbathing on a beach, commentary such as "These sunbathers are enjoying themselves on the beautiful beach here," is redundant. Instead, a sentence like this might be used: "The sunbathing must be mighty fine here, for travelers come from Washington, Oregon, and many Eastern states to visit Catalina and its

beautiful beaches." This second sentence, while not an example of deathless prose, does eliminate the schoolbookish explaining found in the first example and in many improperly-prepared scripts.

Narration scripts for pictures that demonstrate something specific are, as a general rule, easier to write than those dealing in generalities. A film on pineapple canning or a trip to the Grand Canyon presents no special problems to the script writer. But a film on, say, taxation or the modeling industry might require extra thought. The first two subjects could be filmed by a competent cameraman without even a script; the writer's job would be only to give further information and explanations of what is on the screen. But the modeling business is a more abstract subject and a film on it requires more organization of material. While the narrator discussed how models are chosen, how the agencies operate etc., the audience would see scenes designed to illustrate his remarks. Since there are so many ways to present a subject as complex as a unique type of business, it is important to have an adequate script or outline before filming begins to avoid waste.

The subject of taxation is at a still

higher level of abstraction. Therefore, a film on taxation would give its information almost entirely in the narration, with the screen acting merely as an agent of illustration.

Before post-recording a film, the narration should be read against the film being run either on a projector or a viewer. Some re-editing of the picture and sound track is usually needed after recording to match the two to best advantage, but it is a good idea to reduce these adjustments to a minimum. Unnatural rhythms in the flow of the announcer's voice or the picture can result if too much editing is done to match the two.

Some writers prefer to revise their scripts as they run the film through a Moviola. Thus, they may repeat any section of film as often as necessary to match their wording for it.

There are two schools of thought concerning the recording of narration. Some producers prefer to project the picture while the announcer reads from his script, while others rehearse the announcers with the film running but record without it. Your own choice can be made after experimenting with both systems.

Sync sound is being used more often in the production of commercial films these days, largely because sound recording equipment is more readily available. Previously, only a few producers had their own sound recording units and budgets were seldom large enough to rent them until the time came to record music and narration. Today, also, magnetic tape and film recorders are being used by many 16mm. and 35mm. film producers to obtain lip-sync recordings "on the spot" during the regular filming. And small recording studios with sound channels are now more generally available at reasonable rates in several large cities.

The simplest use of sync-sound recording occurs in shots of a person speaking, facing the camera. This device is used when the narrator is a well-known personality who should be introduced to the audience or when an expert is invited to supply some information in his own words. The "March of Time" often adds authority to its films by having leaders in government, industry, and labor speak directly to the audience.

All types of non-theatrical films now feature some dialogue scenes photographed in sync sound. A commercial picture introducing a new product is likely to contain a sequence in which typical users discuss the advantages of that product. Political films get their messages across better with scenes in which voters talk over issues of the day —to the inevitable advantage of the sponsoring group. Producers have discovered that professional actors aren't needed if a strongly "realistic" flavor is desired in the film. In fact, non-professionals often make a picture seem more convincing because the audience assumes they are saying what they really think. The hesitant, down-to-earth speech of newcomers to acting causes an audience to discount that there are writers, directors, and editors controlling what is said.

The question might arise in a story conference: "When should we use dialogue sequences?" There are several excellent uses of dialogue in documentary films, and the first to be described is the one in which dialogue brings the film to a "human level." A film with many impersonal scenes can lose effectiveness with an audience if it doesn't seem to be about something that affects them personally. Natural dialogue can bridge this emotional gap between the filmmaker and his audience. For example, the "March of Time" used dialogue very cleverly in a short on men's clothing. At one point, a scene in a clothing store was introduced in which a man and his pretty, young wife argued about the kind of suit he should buy. Then, later in the film, we meet the couple again, discussing finances and how much they can afford for clothes. These scenes injected the element of human interest and brought the picture closer to our own experiences.

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Another use of dialogue is found in films designed to sway public opinion. If there are some obvious objections to the ideas presented, a clever film-maker may cut to a scene of a discussion group. A panel member raises his objection, as members of the audience say to themselves, "Just what I was wondering about!" Then the objection is answered; and the viewers of the picture, if all went well, are given the impression the issue was met straight on.

Very important facts can be given proper emphasis if they are spoken in sync sound in an otherwise all-narrated picture. We all tend to assume that the people on the screen won't speak at all if narration is used exclusively for the first few minutes of the film. Then, when the time has come to bring forth the important information, the picture cuts unexpectedly to a man who tells us what we should know. This technique was used in the "Why We Fight" Army indoctrination film series produced during the war.

Two places in a film where music seems to be a "must" are behind the opening and end titles. But whether it is used between these two landmarks is a matter of choice. Musical backgrounds are so common that we can safely put them into almost any film without danger of distracting from the subject matter. But continuous music can be a distraction, however, and a good plan would be to reserve music for:

1. Sections of the film that need emphasis.
2. Sequences that are rather pictorial and naturally call for music.
3. Sequences that are disconnected visually and that seem to flow smoother with music to tie them together.
4. The divisions, if any, between different parts of a film. Music without narration can signify the ending of one "chapter" and the beginning of another.

Film composers speak of two different approaches to scoring a picture: mood music and "Mickey Mousing." Mood music refers to background music that fits the picture as to general mood. Mickey Mousing, on the other hand, is the term that describes cueing music to fit each movement on the screen. It is named after Walt Disney's famous Mickey Mouse, of course, cartoon music usually matches the action with such fidelity that the name is appropriate.

Fortunately, the easiest method of scoring is the most commonly used. Mood music can be used with most any documentary film. Appropriate selections are available to the low-budget producer on records of cleared music. These recordings are frequently indexed by both mood and title and can often be judiciously selected to fit a picture as closely as an original score. Experienced music editors are able to lift short passages from this "canned" music and fit them into the film to give the effect of Mickey Mousing. Their trained ears quickly detect lines that synchronize with key actions of the picture.

As for sound effects, an editor can usually decide for himself which ones are worth cutting into the sound track and which ones are unnecessary. In a narrated picture, an audience doesn't expect everything on the screen to make noises as in real life and in dramatic films, but certain effects are seldom omitted. Trains, guns, explosions, running horses, and lightning affect us as being strangely silenced if their accompanying noises are not heard.

Incidental sounds that we seldom pay much attention to in reality can be overlooked in a documentary film. Street noises, opening doors, footsteps, etc., are left off the sound track unless they carry a special significance. END

PHOTOGRAPHING THE SPORTS FILM

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made with the athletes or the officials. Usually such cooperation is readily available, provided that approach is made through proper channels

No matter for what purpose a game or sport is being filmed, there are certain techniques which are universally applicable, for example, it is essential to create a "mounting" for the action by showing something of the locale, the spectators, and any interesting byplay that takes place on the sidelines. Such shots will serve a two-fold purpose: they will not only provide a valuable means of catching the spirit of the event, but also serve to provide *cutaway* shots to bridge gaps in time or action. Purely from the audience standpoint, these add variety and interest to the film

Wherever you have an unusual or especially pictorial locale, play it up by dramatizing it with nice full establishing shots or interesting angle shots of closer detail. If you are shooting deep sea fishing near Catalina Island, skiing at Lake Placid, or diving at Acapulco, you will most certainly want interesting shots of these locales to introduce the sports sequences.

For most sports events a turret camera set up in a central location that commands the full field of play will net important footage. The lenses in the turret should consist of a wide angle, a standard focal length, and a telephoto at least twice the focal length of the standard lens. A good optical viewfinder duplicating the fields of all these lenses is also a necessity Sports action, such as foothall where players' movements are very close and rapid, is difficult to follow at best, and if the cameraman does not have a view-finder which will enable him to see and follow the hall, scenes will be erratic, to say the least

The ideal method for making record shots of a game is to have one or more cameras set up at a high central vantage point, and to hove one more camera, preferably hand-held, assigned to a cameraman on the ground level of the playing field or floor This latter operator can roam around freely and rapidly to record close details of the action, and his vantage point will bring the spectator more closely into the game itself.

The value of closeups in the sports film cannot be overemphasized. It is the closeups that not only focus attention on specific plays or maneuvers, but which also bring the audience face-to-face with the force and pattern of the action itself. Good closeups in sports films, when shot uncontrolled, are rela-

tively difficult to get. Telephoto lenses will help very much, but the mobile cameraman on the field stands a better chance of getting dynamic closeups, provided that he is permitted by officials to approach close enough to get them. Where the cameraman is unable to get closeups by these methods, he may find it necessary to stage such scenes after the game is filmed and cut them in for proper effect. This may not be strictly legitimate in the record film, but it is quite permissable in the entertainment or staged type of sports film.

With action developing as fast as it does in the usual sporting event, it is good practice for the cameraman to reduce his worries about camera mechanics to a minimum. Depending upon how far he is from the subject, he might very well set his wide-angle lens at infinity, the standard lens at universal focus, while concentrating upon keeping the telephoto lens critically focussed. It is also a good plan to take basic exposure readings, either incident or reflected, before the event begins, and to follow those readings consistently, unless weather conditions change in the middle of the game. Filming indoors provides its own special exposure problems. Some sports, such as wrestling, boxing, or ice shows, are usually sufficiently well-lighted to enable successful filming in color or black-and-white, depending upon the speed of the lens used. But here again it is wise to take exposure readings in advance, just to be sure.

Special sports present special problems. Swimming, diving, and underwater fishing scenes are immeasurably enhanced by underwater shots—and there are many pools and natural locales which provide glass underwater compartments especially for such shooting.

Skiing is a sport which provides opportunity for extremely dramatic photography, but one has the problem of extreme brightness contrast ratio. It is good general practice to expose for the snow in order to keep this expanse of white from burning out. With panchromatic film and a blue sky, no filters should be used except perhaps a light yellow filter to cut haze, because with exposure calculated for the snow the sky will automatically render slight under-exposure enough to hold a dramatically deep tone. Moonlight effects can be achieved by using a 25-A red filter. Low angles of skiers against the sky taken from below a ridge just as the jump is made make very interesting shots. In fact, one can say generally that low angle shots with filtered sky background are very effective in most types of sports filming.

Slow motion filmed at speeds of anywhere from 32 to 64 frames per second provides an excellent means of studying athletic technique in detail. Golfers and tennis players are especialy interested in such films that aid them to study and improve their individual techniques.

Under special effects one might mention upside-down filming, which has the effect of reversing the action. The footage filmed upside-down is spliced into the finished picture right-side up. This familiar technique, though often used to excess in the professional motion picture, is still quite amusing when properly conceived. Exaggerated action speed achieved by filming at a slow speed is also good for a laugh on occasion.

SURGICAL CINEMATOGRAPHY

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Burke's initial surgical filming was of a gall bladder operation. Using a 16mm. Filmo camera and orthochromatic film, he photographed the entire operation. In those days it required weeks before Eastman laboratories returned processed films and therefore some time elapsed before Burke was to learn that his entire filming effort was in vain. The lighting equipment available to him and used in photographing the operation had not been adequate for the slow-emulsion ortho film, which was all that was available at that time.

Soon after, Burke opened a camera store in Los Angeles specializing in cine' equipment, and among his customers were several physicians and surgeons. Many of them, having taken up 16mm. movie making as a hobby, visualized the potentials of the cine' camera in recording difficult surgical operations as a means of instruction for others. When these doctors learned that Burke already had some experience in filming surgeries, he was sought out for advice and later engaged to undertake the photography of such films for several of his medico-clientele.

It was the introduction of Kodachrome film and the Cine Special camera, however, that gave Burke the important tools needed for success in this undertaking—the film for recording in natural colors the intricate textures and tones of the anatomy, and the reflex-focusing feature of the Cine Special camera which now enabled him to obtain needle-sharp focus and frame centering so essential to success of this type of cinematography.

In ensuing years, Burke developed special equipment to meet his particular filming needs. He continues to use the Cine' Special camera and 100-foot magazines. Because a tiny spark could easily ignite the volatile gases often used in

anesthesia, electric camera motors are taboo, and Burke's camera continues to operate on its spring motor. Hundred-foot magazines are used because the larger magazines make the camera top-heavy in the vertical position it is most often used, and this might prove disastrous in the midst of a serious operation. His Special has only the regular two-lens turret. The addition of a three- or four-lens turret might also unbalance the camera. Necessary auxiliary lenses are kept close at hand in a special case attached to the tripod, and are quickly interchangeable by virtue of the standard Eastman bayonet mount.

The tripod Burke uses with this camera was especially built to afford a maximum camera elevation of ten feet. It is exceptionally sturdy, cannot slip on any type floor surface and is adjustable down to the usual range of camera heights afforded by other tripods. In addition it is equipped with special brackets to hold four spotlights. A small stepladder is another important accessory. Other equipment includes a number of photo lamps and stands. All are readily demountable and transportable in dust proof cases built especially for the purpose.

Burke's studio occupies a modest store room in a modern business block on Los Angeles' Beverly Boulevard. Beyond the reception room and office is the actual studio space with its photographic equipment. This is furnished to represent a typical modern doctor's office and consultation room, and is complete with examination table and chairs. Overhead is a permanent installation of floodlights controlled individually or in gangs from a switch panel in a convenient location on the wall. There is a camera boom and a fully mobile dolly which Burke designed himself, and in nearby cabinets are stored, in addition to supplies of photofloods, camera attachments and accessories, a variety of human skulls and other anatomical parts, segmented and hinged, which are used in filming close-ups. These afford the filming of detailed cross-sectional views of those parts of the human anatomy for explanatory sequences that often precede actual surgical scenes in a picture. In addition to this equipment, Burke maintains complete lighting and photographic equipment at the Los Angeles County Hospital where much of his filming is done for surgeons who operate there.

Burke's greatest assets, however, are intangible. The equipment and accessories listed above can easily be duplicated. Not so easy to establish or replace is his personal reputation for complete trustworthiness, his wide knowledge of surgery, and the vast experience of filming in the operating room that he has

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Current Assignments of A.S.C. Members

Major film productions on which members of the American Society of Cinematographers were engaged as directors of photography during the past month

Columbia

• CHARLES LAWTON 'The Mask of The Avenger," with John Derek, Jody Lawrence, Anthony Quinn and Eugene Iglesias. Irving Pichel, director

• BURNETT GUFFEY, "Two Of A Kind," with Lizabeth Scott, Edmond O'Brien, Terry Moore, Alexander Knox Henry Levin, director

• HENRY FREULICH, 'Dick Turpin's Bride," with Louis Hayward, Patricia Medina, Alan Mowbray and Barbara Brown Ralph Murphy, director

• JOSEPH BRUN, "The Whistle At Eaton Falls," (DeRochemont Prodn Shooting In New Hampshire), with Lloyd Bridges, Carlton Carpenter, Dorothy Gish, Murray Hamilton Robert Siodmak, director

• ALLEN SIEGLER, "Smuggler's Gold," with Cameron Mitchell, Amanda Blake, Carl Benton Reed, Peter Thompson William Berke director

• BURNETT GUFFEY, 'Sirocco," with Humphrey Bogart, Lee J Cobb, Marta Toren, Everett Sloan and Zero Mostel Curtis Bernhardt, director

Independent

• ERNEST LASZLO, "Deep Is The Well," (Harry M Popkin Prod), with Richard Rober, Barry Kelley, Christine Larsen, Henry Morgan Leo C Popkin and Russell Rouse, directors

• LIONEL LINDON, "Drums In The Deep South" (King Bros Prod Technicolor), with James Craig, Barbara Payton, Guy Madison, Barton MacLane, Morris Ankrum William Cameron Menzies, director

• ERNEST MILLER, "The Steel Helmet" (Lippert Prod), with Gene Evans, James Edwards, Steve Broidy, Robert Hutton Sam Fuller, producer-director.

• JAMES WONG HOWE, "He Ran All The Way" (Roberts Prod), with John Garfield, Shelly Winters, Wallace Ford, Gladys George John Berry, director

• ERNEST MILLER, "Black Lash," with Peggy Stewart, Ray Bennett, Clark Steven, Bryon Keith Ron Ormond, producer-director

• ERNEST LASZLO, "When I Grow Up" Horizon Prod.), with Robert Preston, Martha Scott, Bobby Driscoll, and Charles Grapewin Michael Kanin, director

• PAUL IVANO, "The Bridge," with Hugo Haas, Beverly Michaels, Robert Dane, Anthony Jochim Hugo Haas, producer-director

M-G-M

• ROBERT SURTEES and WILLIAM SKALL, "Quo Vadis" (Shooting In Italy), with Robert Taylor, Deborah Kerr Mervyn LeRoy, director

• PAUL C. VOGEL, "Go For Broke," with Van Johnson, Warner Anderson and Richard Anderson Robert Pirosh, director.

• JOHN ALTON, 'Father's Little Dividend," with Spencer Tracy, Joan Bennett, Elizabeth Taylor, Don Taylor, Billie Burke and Moroni Olsen Vincent Minelli, director

• ALFRED GILKS, "Excuse My Dust" (Technicolor), with Red Skelton, Sally Forrest, MacDonald Carey, William Demarest and Monica Lewis

• WILLIAM MALLOR, "Sodiers Three" (Technicolor) with Stewart Granger, Walter Pidgeon, David Niven, Robert Newton, Greta Gynt and Robert Coote Tay Garnett, director

• ROBERT PLANCK, "Rich, Young And Pretty" (Technicolor), with Jane Powell, Vic Damone, Wendell Corey, Danielle Darrieux and Una Merkel. Norman Taurog, director

• CHARLES ROSHER, "Showboat' (Technicolor), with Kathryn Grayson Ava Gardner, Howard Keel, Joe E. Brown, Agnes Moorhead George Sidney, director

• JOSEPH RUTTENBERG, "Kind Lady," with Ethel Barrymore, Maurice Evans, Angela Lansbury, Keenan Wynn, Doris Lloyd and Betsy Blair John Sturges, director.

Monogram

• HARRY NEUMANN, "Navy Bound," with Tom Neal, Regis Toomey, Wendy Waldron Paul Landres, director

• MARCEL LEPICARD, "Bowery Battalion," with Leo Gorcey, Huntz Hall, Virginia Hewitt, Donald McBride, Frank Jenks William Beaudine, director

• HARRY NEUMANN, "According To Mrs Hoyle," with Spring Byington, Tanis Chandler, Stephen Chase Jean Yarbrough, director

• GILBERT WARRENTON, "Gold Bullets," with Johnny Mack Brown, Lois Hall Wallace Fox, director

Paramount

• VICTOR MILNER 'Carrie," with Laurence Olivier, Jennifer Jones, Eddie Albert, Ruth Warrick, Basil Ruysdael and Mary Murphy William Wyler, director

• LOYAL GRIGGS, "The Last Outpost" (Pine-Thomas) (Technicolor), with Ronald Reagan, Rhonda Fleming, Bruce Bennett, Bill Williams, Noah Berry, Jr., and Peter Hanson Lewis Foster, director

• JOHN SEITZ, "Dear Brat," with Mona Freeman, Billy De Wolfe, Edward Arnold, Lyle Bettger, Mary Phillips, Lillian Randolph William Seiter, director

• CHARLES LANG, "Quantrell's Raiders" (Hal Wallis Prod), with Alan Ladd, Wendell Corey, Arthur Kennedy William Dieterle, director

• DANIEL FAPP, "Rendezvous," with Joan Fontaine, John Lund, Mona Freeman and Peter Hanson Mitchell Leisen, director.

• RAY RENNAHAN, "Fort Savage" (Formerly titled "Devil's Canyon) (Nat Holt Prod), with Sterling Hayden, Barbara Rush, Forrest Tucker, Arleen Whelan, Richard Arlen, Victor Jory, Edgar Buchanan, Carl Thurston. Ray Enright, director.

• GEORGE BARNES, "Here Comes The Groom," with Bing Crosby, Jane Wyman, Franchot Tone, Robert Keith and Jacky Gencel Frank Capra, producer-director

R.K.O.

• KARL STRUSS, "Tarzan's Peril (Sol Lesser Prod), with Lex Barker, Virginia Huston, George Macready, Glenn Anders and Douglas Fowley Byron Haskin, director

• J ROY HUNT, "Gun Notches," with Tim Holt, Richard Martin, Jean Dixon, Robert Bice Lesley Selander, director

• RUSSELL HARLAN, "The Thing" (Winchester Pictures), with Kenneth Tobey, Margaret Sheridan, James Young Christian Nyby, director.

• EDWARD CRONJAGER, 'Two Tickets To Broadway" (Technicolor), with Janet Leigh, Tony Martin, and Smith & Dale James V Kern, director

• J ROY HUNT, "Pistol Harvest," with Tim Holt, Richard Martin, Joan Dixon, Guy Edward Hearn Lesley Selander, director

• WILLIAM SNYDER, "Flying Leathernecks" (Technicolor), with John Wayne, Robert Ryan, Don Taylor, Jac C Flippen Nicholas Ray, director.

20th Century Fox

• LEON SHAMROY, "On The Riviera" (Technicolor) with Danny Kaye, Gene Tierney, Corinne Calvet, Marcel Dalio, and Ann Codee Walter Lang, director

• FRANK PLANER, "Legion Of The Damned" (Shooting In Germany), with Gary Merrill, Richard Basehart and Oscar Werner Anatol Litvak, director

• LEO TOVER, "Follow The Sun" with Glenn Ford, Anne Baxter, Dennis O'Keefe, and June Havoc Sidney Lanfield, director

• MILTON KRASNER, "I Can Get It For You Wholesale," with Dan Dailey, Susan Hayward, Dennis King, Steve Geray and Vicki Cummings Michael Gordon, director

• HARRY JACKSON, "Take Care Of My Little Girl" (Technicolor), with Jeanne Crain, Jean Peters, Dale Robertson, Mitzi Gaynor, Helen Westcoot, Betty Lynn and Jeffrey Hunter Jean Negulesco, director

• JOE MACDONALD, "U S S Teakettle," with Gary Cooper, Eddie Albert, Jane Greer, and Millard Mitchell Henry Hathaway, director

• CHARLES G CLARKE, "Kangaroo (Technicolor) (Shooting In Australia), with Maureen O'Hara, Peter Lawford, Finlay Currie and Richard Boone Lewis Milestone, director

• LEON SHAMROY, David And Bathsheba" (Technicolor), with Gregory Peck and Susan Hayward Henry King, director.

Universal-International

• RUSSELL METTY, "Up Front," with David Wayne, Tom Ewell, Jeffrey Lynn, Richard Egan, Darren Duhlin and Butch Cavell Alexander Hall, director

• GEORGE ROBINSON, "Abbott & Costello Meet The Invisible Man," with Bud Abbott, Lou Costello, Nancy Guild, Adele Jergens, Arthur Franz, Wm Frawley and Gavin Muir Charles Lamont, director

• CLIFFORD STINE, "Air Cadet," with Stephen McNally, Gail Russell, Richard Long, Alex Nicol, Charles Drake, James Best, Rock Hudson, and Russell Dennis Joseph Pevney, director.

• CHARLES BOYLE, "Don Renegade" (Technicolor), with Ricardo Montalban, Cyd Charisse, Andrea King, Gilbert Roland, J Carrol Naish, George Tobias, Antonio Moreno and Bridget Carr Hugo Fregonese, director

• WILLIAM DANIELS, "Bonaventure," with Claudette Colbert, Ann Blyth, Robert Douglas, Anne Crawford. Douglas Sirk, director

• Russell Metty, "Little Egypt (Technicolor), with Mark Stevens, Rhonda Fleming, Nancy Guild, Charles Drake, Jerome Cowaa, Leon Belasco, Minor Watson Frederick de Cordova, director

• Irving Glassberg, "Francis Goes To The Races," with Donald O'Connor, Piper Lauri, Jesse White and Cecil Kellaway Arthur Lubin, director

• Maury Gertsman, "Cattle Drive" (Technicolor), with Joel McCrea, Dean Stockwell, Chill Wills Kurt Neumann, director

Warner Brothers

• Ernest Haller, "Jim Thorpe, All-American ' with Burt Lancaster, Charles Bickford, Phyllis Thaxter, Steve Cochran Michael Curtiz, director

• Wilfrid Cline, "Lullaby Of Broadway," with Doris Day, Gene Nelson, Billy de Wolfe, S Z Sakall and Ann Triola David Butler, director

• Ted McCord, "Goodbye My Fancy," with Joan Crawford, Frank Lovejoy, Eve Arden, and Virginia Gibson Vincent Sherman, director

• Sid Hickox, "The Travelers," with Kirk Douglas, Virginia Mayo and Walter Brennan, Raoul Walsh, director

• Robert Burkes, "Strangers On A Train," with Rovert Walker, Ruth Roman, Farley Grainger, and Pat Hitchcock. Alfred Hitchcock, director

• Edwin DuPar, "The Story Of Folsom," with David Brian, Steve Cochran, Dick Wesson, Ted de Corsia Crane Wilbur, director

SURGICAL CINEMATOGRAPHY

(Continued from Page 435)

acquired over a period of twenty five years.

In his position as surgical cinematographer his knowledge of surgery etiquette, its procedures and its technical terminology must equal the surgeon's. His position always is that of a guest of the hospital He has no legal rights there, and he must conform to the strict hospital codes. His equipment must be sterile and draped in white linen when set up near the operation. As with surgeons and their attendants, Burke must be clothed in the conventional cap, mask and "whites" before entering the surgery room.

Other precautions consist of securely taping to sockets the electric cables furnishing power for his photo lamps. The circuits must be under-loaded to prevent any power failure during photography Fresh photo lamps are used for every operation to avoid any possible chance of bulb failure or explosion—although the chances of the latter is said to be one in one-million.

Essential to the success of surgical films is the matter of complete cooperation with the surgeon, his associates and assistants. The cinematographer and the surgeon, Burke points out, must first understand each other's problems and be able to work harmoniously together. Prior to a filming assignment, the surgeon explains to the cameraman what the pathological condition is, where it is located, what he intends to do and what he expects to find en route. He emphasizes the important steps in the procedure about to be undertaken. The cameraman then plans his shooting accordingly. Because an operation may consume two or three hours, sometimes more, it is obviously impractical as well as unnecessary to film all of it Except in cases of exceedingly rare operations, most of the routine will be familiar to both student and surgeon. Therefore, filming plans encompass only the highlights which in most cases are ample to cover the main points to be demonstrated, and this usually provides sufficient footage for a film from fifteen to twenty minutes screening time

During the filming of an operation, teamwork between cinematographer and surgeon must be close. Consideration must be given to whether the surgeon is left or right handed, for the field must not be hidden from the camera lens by the surgeon's hands any more than is absolutely necessary. Because of this, the use of special instruments is sometimes required so that the surgeon's hands may move smoothly and steadily outside of camera range.

An experienced surgical cinematographer such as Burke watches closely for the critical moments of the surgery He has no script to go by. Essential

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SURGICAL CINEMATOGRAPHY

(Continued from Page 437)

movements must not be missed for there are never retakes in this work, and for this reason there must be complete confidence cooperation and understanding between surgeon and cinematographer to effect the desired results

The question most often asked Burke by other cinematographers is how he arrives at exposure. Use of an exposure meter, he points out, is impractical. To make a pre-operation reading would establish a workable f/ stop figure, providing that lighting remains fixed during the operation; but this rarely is the case, chiefly because the surgeon and his assistants are always moving about in the very limited field and their heads invariably get in the way to obscure light from one or more lamps.

Burke has come to know light values through years of experience in this particular work He knows that if he has a certain number of photolamps illuminating the field covered by his lens. the exposure figure is so much. When a lamp is obscured by movement of the surgeon or assistants, Burke intuitively figures the illumination difference and changes his exposure accordingly. Often he works with one hand on the lens diaphragm ring, opening up or closing the lens to conform with the prevailing light, while the camera is running.

Photography of actual surgeries is only a part of the production of such films. Invariably the pictures begin with an orientation sequence consisting of diagrams animation or reproduction of X-Ray negatives — perhaps all three. This work is performed in the titling and animation room of Burke's studio and here, of course, all titles for the films are also made.

Most of the films made by Burke today are in sound and for this phase of a production, the film is taken to a local sound studio where the carefully prepared narrative is recorded, then later combined in the dupe prints of the picture.

While most of Burke's work is by special assignment by leading surgeons of the country in recent years he has undertaken the production of a series of medical and surgical films for his library, which he makes available to physicians and surgeons, schools and colleges Films in this library now number over 200 and more are being added as time goes on

Within a few months, Burke will begin a tour of the United States, visiting most of the Master Surgeons of the country — men who are tops in their profession Burke plans to photograph one or more operations by each of these men as a permanent record of their work and technique. These films will become an important part of the Burke Surgical Film Library and provide a priceless source of instruction and visual data for tomorrow's surgeons as well as the medical profession of the country.

SIGNIFICANT KEYLIGHT

(Continued from Page 415)

elements of illumination on the scene, such as fill-light, back-light, and line-light are generally adjusted to be in proper intensity relation to the keylight.

Thus it may be noted that the keylight is the heart of the plan of photographic illumination It is of greatest significance, both with respect to artistic effect and as the basic determining factor of the illumination level.

Since the keylight is of such vital importance in the illumination of a scene it occured to me, several years ago, that a measurement of keylight intensity might serve as an excellent foundation for exposure control. Accordingly a long series of tests were conducted on this matter. Some very interesting findings resulted.

One finding of considerable significance was as follows: The keylight has *two* properties which are of prime importance in exposure determination.

The first is the intensity projected to the position of the subject. This can best be measured at the position of the subject, by the use of a light meter pointed toward the light source.

The second property of importance is the location of the keylight with respect to the camera and subject. It will be appreciated that if the keylight is located approximately behind the camera

it will shine fully on all parts of the camera-side of the subject's face, and consequently will have a relatively high exposure value. If the keylight were located well around behind the subject (assume that the subject is facing the camera), it will shine on possibly only one-fourth of the subject's face, thereby leaving the other three-fourths in shadow. In this location the keylight would have a much lower effective illumination value.

Since the relative location of the keylight has an effect on the exposure value, it is desirable to classify the keylight as

1. Keylight located in a position approximately behind the camera. This is a 0° Keylight. (See Figure 3.)
2. Keylight located in a position roughly 45° above the camera or to one side of the camera. This is a 45° Keylight.
3. Keylight located roughly overhead, or to one side of the subject. This is a 90° Keylight.
4. Keylight located somewhat around behind the subject. This is a 135° Keylight.

Any keylight can be classified as belonging in one of the four groups.

If a bright light is located further around behind the subject than a 135° position, then it cannot qualify as a keylight. In such a position its effect on a subject is that of a back-light or a line-light only.

The keylight source is usually very easy to locate. Outdoors it is generally the sun. If the subject is located in the shade, the keylight usually comes from an area of sky. If the subject is in the open, and the sky is overcast, the keylight may usually be considered as being located about 45° above the camera.

In nearly all photography it will be found that the 45° keylight is by far the most common. In studio work the keylight is wherever the cinematographer chooses to place it, however the 45° location seems to be frequently used.

After an intensive study had been made of the properties of the keylight, it seemed desirable to design an exposure meter which would be directly adapted to those properties. This was accomplished.

The result was the "Keylite" meter shown in Figure 2. This meter takes into account the *two* basically important qualities of the keylight: 1) The intensity projected to subject's position. 2) The relative location of keylight source.

This meter differs from an ordinary exposure meter in several important respects. The light collector is so designed that the meter may be pointed directly at an intense light source without damage to the instrument. The computer dials are designed so as to take into account the effective value of the key light illumination.

The "Keylite" meter is very easy to use. Generally used at subject's location, it is pointed directly toward keylight source. If desired, the meter may be aimed in various directions until the maximum reading for keylight is noted on the pointer dial. This feature affords confidence in the use of the meter because the maximum reading is always the significant reading. The light intensity in foot-candle units is noted. This value is used on the computer dials which form an integral part of the meter. The relative location of keylight source is classified by the operator and that factor is also used on the computer dial. The film speed factor is, of course, also provided for on the dials.

The computer then shows the answer in terms of appropriate lens aperture (F-stop) for any given shutter time. The result is perfectly uniform and desirable exposures for every scene. The "Keylite" meter handles black and white photography and color photography equally well. As a matter of fact this meter seems to be ideally suited to color photography. The natural characteristics of the meter just suit the unique and exacting requirements of color films.

The "Keylite" meter is quite versatile. It covers a range of light intensities from very low levels indoors to the brightest sunlight outdoors. It handles all commonly used film speeds. It covers the useful range of lens aperatures and shutter times. The meter can be used to advantage not only as an exposure control meter, but also as an indicator of illumination contrast. By use of the meter, illumination contrasts can be easily measured, and consequently steps can be taken to keep these contrasts at appropriate values.

It has been found that measurement of the keylight for exposure control purposes serves to eliminate the effects of a number of variables which sometimes tend to confuse the results obtained with an ordinary reflected-light meter. Such variables as change in composition of subject, change in area of included sky, color of subject, etc., have no effect on the operation of the "Keylite" meter because it does not "look at" the subject. The meter "looks at" the keylight source, which is the prime factor in exposure control.

Use of the "Keylite" meter, over an extended period of time in practical photography, has consistently indicated that it is an instrument which can be of great assistance to any photographer, for motion pictures or stills, color or black and white, studio use or outdoors.

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MISCELLANEOUS

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of The American Cinematographer are available for most months of 1948 and 1949 Many earlier issues also available All contain valuable technical articles and information relative to contemporary motion picture photography The December issues contain an annual index as a guide to content of each year's 12 issues Price of back issues in U S, 30c, Foreign, 40c

THE AMERICAN CINEMATOGRAPHER

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(Continued on next page)

WHAT'S NEW

in equipment, accessories, service

"T" Stop Calibrator

National Cine Equipment, Inc, New York, announces a new calibrator for scaling 8, 16 and 35 millimeter camera lenses in 'T stops ranging from 13mm to 300mm

Unit is of the collimating type with integrating sphere mounted on a movable carriage to allow 45° center to corner ratio measurements for all focal lengths An extremely sensitive electron photomultiplier tube and amplifier is used to obtain accurate and consistent readings Adapters for standard mounts (Michell Eyemo 16mm, C-mounts, etc), are inserted in front of the integrating sphere, giving the correct standard depth for each particular mount Readings are taken and direct "T" scale reading is obtained by simple procedure

Detailed information on unit is available from the company at 20 West 22nd St, N Y City 10, N Y

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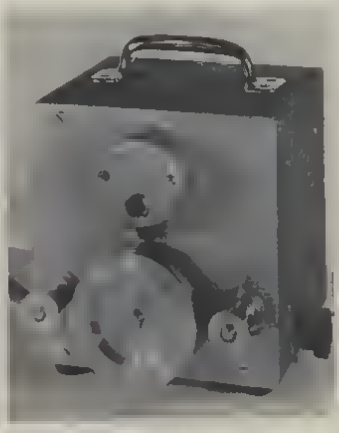

to operate in either direction for positive prints or negatives Film rollers machined to SMPTE standards and fitted with oilless bearings insure against surface scratch of films Stabilizer has needle bearings and a highly polished surface and the stabilizer drum allows accurate control while the film is drawn through the instrument set between rewinds Price is $185 00 FOB factory

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New "Magazine-16"

Newest addition to the 'Magazine-16 group of cine cameras is the new Cine Kodak Royal announced by Eastman Kodak Company Camera features magazine loading, Kodak-made f/1 9 Ektar lens which affords focusing from 12 inches to infinity, single frame release, and an enclosed viewfinder The latter is adjustable precision optical type which can be set to show field covered by the standard, wide angle and telephoto lenses Shutter speeds provided are 16 24, or 64 frames per second Retail price is $192 50

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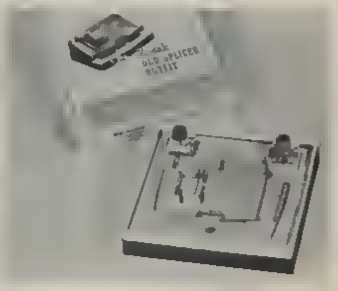
Cine-Kodak Splicer

Smart, new and easy-to-use is the Cine Kodak Duo Splicer Outfit recently announced by Eastman Kodak Company, Rochester, N Y Splicer can be used with either 8mm or 16mm film It can also be used to splice sound film



In addition to splicer itself, outfit includes a 2-ounce bottle of Kodak film cement, an extra bottle for water, a cleaning brush, and set of screws for mounting splicer on editing board Available at Kodak dealers and camera stores, price is $7 50.

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